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# TESTING INTELLIGIBILITY AMONG CHIPPEWA AND CREE DIALECTS

Kent Gordon

0. Introduction. This paper presents the results of a month's dialect survey among Chippewa and, to a lesser extent, Cree speaking Indians<sup>1</sup>. The results recorded here do not in any way represent an exhaustive statement of the dialectual variation within the Chippewa (or Cree) language. Test results were obtained from only four points. They do represent, however, a tolerably accurate measurement of the range of intelligibility among the points tested. Field work was begun July 14, 1965, and terminated August 13. The first part of that period was spent collecting tape-recorded materials which were utilized in the latter part for the purpose of testing intelligibility. Materials were collected at the following points:

Text 1 (Chippewa)	Squaw Point, Minnesota	Leech Lake Reserve
Text 2 (Chippewa)	Red Lake, Minnesota	Red Lake Reserve
Text 3 (Cree)	Dunseith, N. Dakota	Turtle Mtn. Reserve
Text 4 (Chippewa)	Belcourt, N. Dakota <sub>2</sub>	Turtle Mtn. Reserve
Text 5 (Chippewa)	Pikangikum, Ontario <sup>2</sup>	Pikangikum Reserve
Text 6 (Chippewa)	North Spirit Lake, Ont.	N. Spirit Lake Reserve

Materials consisted of six tape-recorded texts and six Swadesh diagnostic word lists (100 items), one of each from each point. The six texts were recorded on one tape which we shall call the test tape. This test tape was used as the basis for testing at the following points:

Test A	Ponemah and Redby, Minn.	Red Lake Reserve
Test B	Squaw Point and Inger, Minn.	Leech Lake Res. & vicinity
Test C	Dunseith and Belcourt, N. D.	Turtle Mtn. Reserve
Test D	Chagoness, Saskatchewan	Chagoness Reserve

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1. General method used was introduced by Voegelin and Harris (1951) and applied by Pierce to Algonkian (1952) and by Biggs to Yuman (1957). The first application of this method, however, goes back to 1950 (based on the Voegelin-Harris paper when it was still in manuscript form) when the Hickersons and Turner applied it to Iroquois (see Bibliography). J. Crawford applied the method (with modifications) to Mixe in 1964 and I am indebted to him for apprenticeship and orientation in the present application to Chippewa. H. Bradley (Mixtec) and H. Aschmann (Totomac) have also used this approach.

2. I am indebted also to C. Fiero of Pikangikum for his indispensable help with the survey.

# 1. Procedure in collecting tape-recorded materials.

1.1. An attempt was made to collect text materials of the same general type (personal or family history) and of the same general length (c. two minutes). Folk-tales, legends, local or general history were disallowed<sup>3</sup> since these would not serve to measure actual dialect intelligibility so much as personal knowledge and experience. Also in the interest of uniformity, the texts were all about two minutes long (three of them were exactly two minutes; and three were between two and two and one-half minutes). A Wollansak recorder was used at points 1,2,3,4, and a Uher at points 5 and 6. Good-quality recordings were sought and except for variation in loudness during play-back they were uniformly good. In actual testing the above-mentioned variation was eliminated by volume control.

Eliminating variables at this stage of the survey seemed to eliminate those variables which could most radically skew the test results. Variables which appear at a later stage such as informant attentiveness, I.Q., etc., are permitted to influence the results since these are very much a part of actual intelligibility responses<sup>4</sup> (whereas variables at the recording stage are not).

1.2. Rough phonetic transcriptions were made of each text at the time and place of the original recording. In each case the recording was played back phrase by phrase to the informant who in turn would repeat each phrase, word by word, for ease and accuracy of transcription. These transcriptions were rewritten phonemically (with help from Bloomfield, and especially C. Fiero of Pikangikum, Ontario). There is no pretension to consistency or accuracy through-out, however; and any such deficiencies are very much my own. Translations were

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3. There is apparently such an element, however, in Text 3 (Cree).

4. Pierce, "Dialect Distance Testing in Algonquian", IJAL, vol. 18, (1952) pp. 206-7.

given by the recording informants with the following exceptions: Text 2 was translated by an acquaintance of the recording informant from Red Lake; and texts 5 and 6 were translated by C. Fiero. Transcriptions and translations are to be found in the appendix.

## 2. Test Design.

2.1. Using the English translations as a base, a set of ten questions (in English) was drawn up for each of the texts (see appendix). The person-subject being tested would be put through the following procedure:

- He would
- (1) listen to text 1
  - (2) answer ten questions about text 1
  - (3) listen to text 2
  - (4) answer ten questions about text 2, and so forth
  - (5) answer several questions pertaining to personal and family history, travel and language experience (see appendix for a copy of this questionnaire)

The tester observed the following procedure:

- He would
- (1) set up apparatus for testing<sup>5</sup>
  - (2) play back text 1
  - (3) ask set of questions on text 1
  - (4) score each answer and record in notebook
  - (5) proceed with text 2, and so forth
  - (6) ask several questions pertaining to subject's personal and family history, travel and experience
  - (7) rewind tape for next run
  - (8) test ten subjects at each test point<sup>6</sup>

2.2. In the experience of the present tester two methods of testing intelligibility have been employed: the one just described and the content-repeat method. This latter method was not used in this survey where it was at all possible to use the former. It, however, had to be used at test point D (and in one case at test point C). The question and answer approach outlined above is to be preferred because it is more strictly suited to measuring intelligibility than the content-repeat. That is, the use of questions makes up for any lack in the subject's memory by providing context for him to recall

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5. A transistorized machine (a Butoba) was used in the testing. Many homes were without electricity.

the answer--if the part of the text in question was at all intelligible to him. The content-repeat method, on the other hand, tends to provide the tester with a quantity of unsorted data (from the subject's response) out of which he must extract just those phenomena that relate to intelligibility--to which he must finally attach a score. This method also tempts the tester to be a mind-reader and, thus, some objectivity is lost.

A combination of the two methods, however, seems to be very satisfactory. The asking of one leading question (e.g., question #1 for any given text) may trigger a content-repeat response in which all or some of the remaining questions are answered willy-nilly. Many of the more lively subjects responded this way during the testing.

Another method which was not used in this survey, but one which might have yielded a better statistic we may call a translation-repeat method. In this approach the subject is asked to listen to the text once through. The text is then rewound and played again phrase by phrase. As each phrase is played back the subject is asked to translate what he heard (into English). A more specific intelligibility could be measured in this way. Variations of this technique have been employed elsewhere.<sup>7</sup>

### 3. Test Results.

3.1. Each correct answer was recorded in the notebook as a 1; each incorrect answer as a 0; and each partially correct answer as a  $\frac{1}{2}$ <sup>8</sup>. Converted to percentage scores each correct answer was equal to 10%, and so forth. Below, only the raw scores are cited. No attempt has been made to adjust the scores in the interest of upgrading the subject's intelligibility of his own dialect to 100% and scaling the others

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6. Only 8 were tested at test point C. And at test point D family units, in the main, were tested, rather than individuals.

7. Pierce, *op. cit.*, Biggs, "Testing Intelligibility among Yuman Languages", Vol. 23, IJAL (1957), pp. 57-62. J. Crawford used a

accordingly.<sup>9</sup>

### 3.2. Tabulation of results (boxed scores are percentages of intelligibility)

#### 3.2.1. Test A                      Ponemah and Redby, Minn.                      Red Lake Reserve

	text 1	text 2	text 3	text 4	text 5	text 6
Subject 1	90	90	60	95	70	100
Subject 2	65	100	10	100	60	100
" 3	100	90	20	90	60	65
" 4	75	90	10	95	60	85
" 5	95	100	35	90	90	90
" 6	90	95	40	80	60	90
" 7	75	90	10	80	90	95
" 8	80	100	20	90	65	85
" 9	70	80	10	90	40	85
" 10	100	95	10	80	40	35
Average Result	84%	93%	22.5%	89%	63.5%	83%

#### 3.2.1.1. Chart A showing descending order of intelligibility for test A.

1. Red Lake, Minn.	Chippewa	93%
2. Turtle Mtn., N. D.	Chippewa	89%
3. Squaw Point, Minn.	Chippewa	84%
4. N. Spirit Lake, Ont.	Chippewa	83%
5. Pikangikum, Ont.	Chippewa	63.5%
6. Turtle Mtn., N.D.	Cree	22.5%

3.2.1.2. Significant intelligibility clustering, Chart A shows that numbers 1,2,3,4 form one cluster whose range is from 83% to 93%. Number 5 is in a class by itself, and number 6 forms yet another class. That is, the gap between 1 and 4 in the chart is less significant than the gap (percentage-wise) between 4 and 5. And perhaps most significant of all is the gap between (1-5) and 6. The nature of the significance will be discussed at a later point.

combination of the content-repeat approach and the translation-repeat (modified) in the Mixe survey. In the latter the subject translated what he heard into his own brand of Mixe.

8. An incorrect answer might be any one of a number of things; e.g., failure to remember, unwillingness to answer, wrong answer, etc.

9. Pierce, op. cit. pp. 206-8.

## 3.2.2 Test B

## Squaw Point and Inger

## Leech Lake Reserve

		text 1	text 2	text 3	text 4	text 5	text 6
Subject 1		--*	90	10	70	0*	25*
Subject 2		--*	80	15	95	45	65
"	3	--*	95	20	90	90	100
"	4	--*	80	10	90	55	50
"	5	--*	100	20	85	90	95
"	6	70	90	10	80	80	70
"	7	85	75	10	90	50	65
"	8	80	80	10	90	10**	40**
"	9	100	80	10	80	80	60
"	10	90	90	15	90	70	65
Average Result		85%	86%	13%	86%	57%	63.5%

## 3.2.2.1. Chart B showing descending order of intelligibility for test B.

1. Red Lake, Minn.	Chippewa	86%
2. Turtle Mtn., N. D.	Chippewa	86%
3. Squaw Point, Minn.	Chippewa	85%
4. N. Spirit Lake, Ont.	Chippewa	63.5%
5. Pikangikum, Ont.	Chippewa	57%
6. Turtle Mtn., N. D.	Cree	13%

3.2.2.2. Significant intelligibility clustering. Chart B shows that numbers 1,2,3, form one cluster whose range is 85% to 86%. Numbers 4 and 5 form another cluster whose range is 57% to 63.5%. And number 6 stands alone apart from the rest. It will be noted at this point that we have one "mutual intelligibility" score. Test A shows a score of 84% for the text recorded at test point B (text 1). Test B, on the other hand, shows a score of 86% for the text recorded at test point A. The proximity of these scores to one another within the higher ranges of intelligibility indicates that the dialects represented by A and B are mutually intelligible. Furthermore, A and B evidence approximately the same distribution of intelligibility with respect to the other dialects. There is one exception. Whereas A logged 83% for N. Spirit Lake, B logged only 63.5%.

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\* Text 1 was not used for testing subjects 1-5 since the recording informant was present at the test site. The Average Result is therefore derived from scores 6-10.

## 3.2.3. Test C

## Dunseith and Belcourt

## Turtle Mtn. Reserve

		text 1	text 2	text 3	text 4	text 5	text 6
Subject	1	95	70	100	100	65	55
Subject	2	60	70	100	70	65	55
"	3	65	80	0	80	30	60
"	4	60	50	100	70	40	50
"	5	10	0	10	0	0	0
"	6	80	80	90	100	55	75
"	7+	5	25	50	30	10	5
"	8	25	0	75	10	0	5
Average							
Result		50%	47%	65.5%	57.5%	33%	38%

As one can readily see there is something wrong with the way the scores line up (e.g., subject 2 scored 100% on text 3 whereas subject 3 scored 0%). The skewing is due to the complex language situation at test point C (Dunseith and Belcourt). There are a few Cree full-bloods living on the Reserve. They speak Cree and French-Cree<sup>10</sup> and understand varying amounts of Chippewa. Such are subject 1 and 2 above. If we tabulate their scores separately we obtain the following result:

		text 1	text 2	text 3	text 4	text 5	text 6
Subject	1	95	70	100	100	65	55
Subject	2	60	70	100	70	65	55
Average							
Result		77.5%	70%	100%	85%	65%	55%

There are also a number of Chippewa full-bloods living on this Reserve. They speak Chippewa and understand varying amounts of Cree and French-Cree (All residents on this Reserve speak English). Such are subjects 3 and 6 above. Below is a tabulation of their scores.

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\* (see p. 6) This subject was blind. He has been blind for about the last 12 years.

\*\* (see p. 6) This subject was hard of hearing. It is interesting to note that defective hearing did not affect measurably his responses for texts 1, 2, and 4; but for texts 5 and 6 (dialects already suspected of being different from 1, 2, and 4) his hearing did evidently come into play.

+ Scored on basis of content-repeat.



	text 1	text 2	text 3	text 4	text 5	text 6
Subject 3	65	80	0	80	30	60
Subject 6	80	80	90	100	55	75
Average Result	72.5%	80%	45%	90%	42.5%	67.5%

The majority of the residents of the Turtle Mtn. Reserve spoke a mixture of French and Cree (with a minor Chippewa element). Many vocabulary items and some common phrases (e.g., c'est bon) were French. But the Grammatical patterns were Cree. Some of the younger residents mix in a little English. Still others mix in some Sioux (Fort Totten, N. D.). The French element is stronger in some than it is in others. The study of the languages and dialects spoken on this Reserve would make a study in itself. Below are tabulated the results of those who said they spoke French-Cree.

	text 1	text 2	text 3	text 4	text 5	text 6
Subject 4	60	50	100	70	40	50
Subject 5	10	0	10	0	0	0
" 7	5	25	50	30	10	5
" 8	25	0	75	10	0	5
Average Result	25%	19%	59%	27.5%	12.5%	15%

This last table of results seems to indicate that none of the Chippewa dialects nor the Cree dialect are highly intelligible to those whose first language is the French-Cree.

#### 3.2.4. Test D Chagones, Saskatchewan Chagones Reserve

	text 1	text 2	text 3	text 4	text 5	text 6
*Subject 1	60	70	--	80	90	90
Subject 2	40	20	--	80	90	100
" 3	70	65	--	90	90	95
" 4	90	70	--	90	100	100
Average Result	65%	56%	--	85%	92.5%	96%

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\* Each subject in this Test with the exception of # 4 was a family unit rather than an individual. Due to a difficult testing situation (and because we had no earphones with us) we resorted to a content-repeat approach. The scores do not, therefore, represent the same degree of accuracy as in the preceding tests.

## 3.2.4.1. Chart D showing descending order of intelligibility for test D.

1. N. Spirit Lake, Ont.	Chippewa	96%
2. Pikangikum, Ont.	Chippewa	92.5%
3. Turtle Mtn., N. D.	Chippewa	85%
4. Squaw Point, Minn.	Chippewa	65%
5. Red Lake, Minn.	Chippewa	56%
6. Turtle Mtn., N. D.	Cree	--*

3.2.4.2. Significant Intelligibility Clustering. Chart D shows that numbers 1,2,3 form one cluster whose range is 85% to 96%. Numbers 4 and 5 form another cluster whose range is 56% to 65%. Number 6, though there are no results to confirm it, is in a class by itself. It seems quite safe to attach a percentage score to it of no more than 20%<sup>11</sup>.

4. Significance of the results.

4.1. Since Leech Lake Chippewa and Red Lake Chippewa may be said to be mutually intelligible (see 3.2.2.2.) and since they evidence similar distribution of intelligibility over the non-Minnesota dialects (numbers 3,4,5,6), with the single exception of number 6, we may wish to combine their results:

	text 1	text 2	text 3	text 4	text 5	text 6
Red Lake	84	93	22.5	89	63.5	83
Leech Lake	85	86	13	86	57	63.5
Average						
Result	84.5%	89.5%	18%	87.5%	60%	73%

## 4.1.1. Significant intelligibility clustering.

<u>1</u>	<u>2</u>	<u>3</u>
1. 84.5%	5. 60%	3. 18%
2. 89.5%	6. 73%	
4. 87.5%		

From this we may safely conclude that 4, Turtle Mtn. Chippewa is intelligible to 1,2, Minnesota Chippewa; that 5,6, N. Ontario Chippewa are not as intelligible; and that 3, Turtle Mtn. Cree is least

10. The dialect most spoken on the Turtle Mtn. Reserve.

\* Content-repeats of this text were hard to elicit.

11. What comments were offered concerning this text revealed their inability to understand it.

intelligible of all.

Furthermore, we can say that 4, Turtle Mtn. Chippewa, could readily use written materials that were produced in the Minnesota Chippewa (1,2). This is not to say that the dialects are identical. It is to say that 4 could share 1,2's written materials without any significant loss of intelligibility<sup>12</sup>. We can also say that 1 can use 2's materials, and vice versa. But, 3, Turtle Mtn. Cree could not use written materials produced at 1,2. The question remains: could 5,6 Northern Ontario Chippewa use written materials from 1,2, Minnesota Chippewa<sup>13</sup>? The answer is probably twofold: yes and no. Yes, if we mean they could understand in part. No, if we mean they could understand in full. The percentage of information transfer<sup>14</sup> with respect to written materials might correspond roughly to that transferred through the taped recordings.<sup>15</sup>

12. The transition made from recorded materials to written materials here assumes that there is a close correlation between the two. There is no reason to expect a lack of correlation between intelligibility of written and of non-written materials among language groups which to the present day do not have written materials (of any quantity) and which, therefore, have not had the opportunity to cultivate a distinction between literary and non-literary modes of expression.

13. Due to certain imperfections in the test procedure for text 6, the Red Lakers of Minnesota scored higher than they would have if the questions had hit upon some of the finer points of the text. I have chosen to combine the Red Lake figure with that from Leech Lake with the understanding that, after all, the Red Lakers probably do understand text 6 better than the Leech Lakers...but not significantly so.

14. Pierce, op. cit., p. 203.

15. This is borne out by an experiment performed by Fiero at Chagoneess. He read through a couple pages of text with a small group of Chagoneess Chippewas present and willing to comment. The text read was taken from the first chapter of Genesis, a text which Fiero had translated into the Chippewa of Pikangikum, Ontario. There were only 4 words or phrases (a minor part of that which was read) which those listening wanted to change. The rest was very intelligible to them and they said so. In this instance the high intelligibility registered for the written materials corresponds to the high rate of intelligibility registered for the tape-recorded materials (92.5% for the Pikangikum text).

In terms of the actual production of written materials (such as the Old and/or New Testaments) for Minnesota and Northern Ontario Chippewas what does the preceding mean? Would separate translation programs be required (as is the case between 1,2 and 3)<sup>16</sup>? Probably not. A translation done for the Minnesotans, for example, might well serve as a basis for a translation for the Northern Ontarians<sup>17</sup>. The percentile figure of 60%-73% indicates that this might be the case. The figure for the Turtle Mtn. Cree, 18%, however, does not seem to even provide a basis for shared translation programs.

With respect to the distribution of personnel the problem could most economically<sup>18</sup> be solved by extending one team's translation program to include the related dialect (in this case Northern Ontario). This is at best an ideal solution and one which may meet with any number of objections from a practical viewpoint. In many cases like the one being considered additional teams have been assigned to (closely) related dialects.

4.2. The results from Chagoness show that they could share written materials produced at either Pikangikum or North Spirit Lake (N. Ontario). On the other hand they might not be able to share such materials produced in Minnesota without their being modified in terms of their own dialect.

Average Result	text 1	text 2	text 3	text 4	text 5	text 6
at Chagoness	65	56	--	85	92.5	96

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16. Confirmed by the fact that a separate (or nearly so) translation program for Chippewa is presently in progress.

17. Further survey, of course, would be needed in order to show whether or not the dialects represented by texts 5 and 6 are mutually intelligible and would be able to share the same translation.

18. In view of the paucity of workers and the multiplicity of dialects.

APPENDIX

Transcription and translation of text 1 from Squaw Point Minnesota.

A?aw ki:win ta:moninim kašiwē:pisiya:mpa:n kiya:ka:šiya:  
That you I am telling what happened to me when I was small,

1904 . appi i?iw ki:šaya:pama iškweya:nka tipiško:ko:  
in 1904 . time this I went behind just like

sa:ka:mo: kamiko:ns kiwatowa:-ima: mikwe:ko . Mise: i?iw  
outside toilet I went there in the brush. Then

kinawita:no misiwe: nki:?ina:p Ka:wi:nke:ko kiwa:panta:ssi.  
I stooped over, everywhere I looked I didn't see anything .

nkontinko: nowanta:n ka:skipakkito:makak ki:wa:pama:  
All of a sudden I heard leaves rustling, I saw

pišiki:ns 'holstein' wa:paskisik ka:ye:makate:wisi. Mise: i.iw  
a calf holstein white and black-haired . Then

Ka:šiša:ya:n awoni:mama: ki:wintamawok ka:wi:nkite:pwe:ta:kosi:.  
I went to mother and her I told, she didn't believe me.

Nkontink sokkominawa: a:manch enta:soponakato:pa:ne:n 1904  
Sometime thereafter ...who knows how many years it was from 1904

to 1929 iwiti, kiki:kino: wa:škwē:pi: nkontinko:. ka:šite:pito:-  
to 1929 , I was drunk for a long time. I got

wiya:n o?o kine:piko:ns sowa l?l e:ta:mowat o?o minikwe:-  
these snakes (emphatic) how they call those who

wininiwak awe:kwe:n ka:wa:škwē:pi:t misiwa: mimikwe:sik.  
drink whoever was drunk without drinking

Me:ta:sokon kike:waškwēpi . Mise: i?iw kikota:chiya: ka:wi:n-  
Ten days I was drunk . Then I was afraid I didn't

ka:ki:kitosi usa:m kikota:n chišina:šo:kowa: "bughouse" .  
talk because I was afraid they would send me to the bughouse.

Mise: i?iw nkotinkipikakka: ka:šipawa:nchikke:ya:n, kiwa:panta:  
Then sometime later one night I had a dream, I saw

anakwat-ima: akote:makak, mise: i?iw pišiki:ns ka:wa:pamakipan  
a cloud hanging , then the calf the one I saw before

iwiti chime:winsa iwiti 1904 . Achina:tako: kiwa:pama: misaminawa  
a long time ago in 1904. Just a short time I saw it when

a:nchi:makak i?iw pawa:chi:ke:win kasiwa:pamak Jesus Christ  
the scene changed in the dream and I saw Jesus Christ

ni:pawit kanawa:pamit . Mise: i?iw kikota:chiya:, mise: i?iw  
standing looking at me . Then I was afraid , Then

kine:nta:m piya:še:kiwe:t ?aw Jesus ka:wi:ntas nto:šit:ta:ssi.  
I thought was returning SIL-UNA-Workpapers 1965 and I wasn't ready .

Mise: i?iw Kikotachiya:n; mise: i?iw ka:šikokossiya:; mise: i?iw  
 Then I was afraid; then I woke up ; then

ka:šinu:chimowit ?aw Jesus Christ e:we: e:š-i-a:ya:?ampa:n i?iw  
 he healed me that Jesus Christ of my affliction

"snakes" e:na:piniyampa:n kiwaškwe:piya .  
 snakes my affliction from drinking .

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### Questions about text 1

1. What happened to him way back in 1904<sup>1</sup>?
2. What color was the calf?
3. Whom did he tell about what he had seen?
4. Did she believe him?
5. What happened to this man many years later<sup>1</sup>?
6. What kind of a sickness did he get?
7. Why was he afraid to talk to people at this time?
8. What three things did he see in his dream<sup>2</sup>?
9. Why was he afraid when he saw Jesus?
10. Who healed this man of the "snakes"?

1. To this general type question just about anything was scored as a correct answer which happened to him prior to 1929.
2. Any two of the things mentioned was given full credit.

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